

NAME _____

DATE _____

Module 2 Writing and Simplifying Algebraic Expressions
Lesson 3 Identifying Algebraic Properties



**independent
practice**

Rewrite using the Commutative Property of Addition.

1. $65ab + 453abc$

2. $5(64 + 76r)$

Rewrite using the Associative Property.

3. $50 \cdot (25 \cdot 39y^3)$

4. $(345p + 362k) + 48k$

Rewrite using the Distributive Property of Multiplication over Addition.

5. $54(100 - 1)$

6. $8(3 - 1)$

7. $(42 + 24)5$

8. $15(15 + 30)$

Name the Property used in each equation.

9. $\frac{1}{2} \cdot 1 = 1 \cdot \frac{1}{2}$

10. $25(9 - 6) = 225 - 150$

11. $0 = -3r + 3r$

12. $345x + (124x + 58) = (345x + 124x) + 58$

13. $(a)(44) = 0$

14. $\left(-\frac{3}{8}\right) + \frac{3}{8} = \frac{3}{8} + \left(-\frac{3}{8}\right)$

15. $(x + y) \cdot (z + w) = (z + w) \cdot (x + y)$

16. $144(x + 2) = 144x + 288$

17. $98x^2 + 75y^5 = 75y^5 + 98x^2$

18. $44m + (36m + 23) = (44m + 36m) + 23$

19. $-37 + 0 = -37$

20. $1 = \frac{3}{5} \cdot \frac{5}{3}$

Journal

1. Explain how to distinguish between the commutative and associative properties.
2. Write a rule which could be called the Identity Property of Division. What would be the identity element?
3. How can we rewrite a subtraction expression in order to apply the Commutative Property of Addition? Give an example.
4. Why does zero not have a reciprocal?
5. Give an example of an expression that you might want to simplify using the Distributive Property of Multiplication over Addition. Explain why it would be useful to use this property.

Cumulative Review

Simplify each expression.

1. $65 - 453$

2. $(6 + 7)(3 - 7)$

3. $(6)(8)(-3)$

4. $(4 + 8) \cdot 2$

5. $-5(15 - 30)$

6. $27 - (3 + 14)$

7. $(22 + 24)(-2)$

8. $24 \cdot (-2) + (15 - 6) \cdot 4 - 2^3$

9. $\frac{3}{4} + \frac{7}{8}$

10. $6.2 - 4.752$



Manipulative Problems

Name the property or properties illustrated.



